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Mr. Randy Matty, P.E.
Air Management Engineer
Wisconsin Department of Natural Resources
2984 Shawano Ave.
Green Bay, WI 54313-6727

May 5, 2014

RE: Notification of the Replacement of the S10 and S20 COMs

Dear Mr. Matty:

Manitowoc Public Utilities is planning to replace the existing United Sciences, Inc. model 550 continuous opacity monitors (COMs) installed in stacks S10 and S20 with new Durag Model D-R 290 COMs (spec sheet attached). The new COMs will comply with ASTM D 6216-98 and PS-1 of Appendix B in 40 CFR Part 60 standards. The new COMs will be provided, installed, and certified by the system integrator Control Analytics, Inc. The COM replacement is scheduled for July of 2014.

The new COMS will be installed in the same location as the existing units and will continue to use the existing DAHS. The units will be installed consecutively; however during construction no COM will be operational during each replacement. We propose to collect visible emission data for 18-minutes once each day until the new COM is operational. We will use associates with valid visible emission certifications to collect the emission data. We expect the COM outage will last from 1 to 3 days. We will provide you notification of the actual shutdown and start-up dates.

If you have any questions regarding this notification or need additional information please don't hesitate to contact me.

Sincerely,

Thomas E. Reed, P.E.
Environmental Engineer
Manitowoc Public Utilities
Phone: 920-686-4384
Cell: 920-973-7134
Fax: 920-686-4348

Cc: Red Jones – MPU
Jerry Ahlswede – MPU
Brian Fassbender – MPU
Tim Harding – MPU
Scott Karbon – MPU

File: PowerPlant/Regulatory - Environmental/Correspondence/WDNR
Document: 2014-05-05 (WDNR) Notification of S10 and S20 COM Replacement

5/5/2014

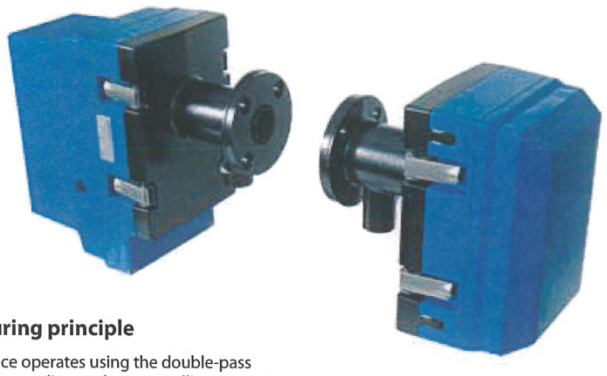
MPU03953

# DURAG

## D-R 290

## Optical opacity /dust monitor

**Standard system for plants with small to medium dust concentrations.**



### Features

- In-situ measuring procedure, continuous measurement
- Semi-conductor source with long service life
- Super-wide band diode (SWBD), which provides more stable measuring results in comparison to devices with conventional LEDs
- Powerful microprocessor technology
- Measured value display on LC display in opacity, extinction or in mg/m³
- Automatic function tests with correction of measured values in relation to soiling
- Optics and electronics in a hermetically sealed unit - no smoke gas can enter device
- Easy adjustment without additional equipment
- Low-maintenance thanks to optimal purge air conduction.

### Applications

Plants in which the dust concentration quantity needs to be measured, e.g.:

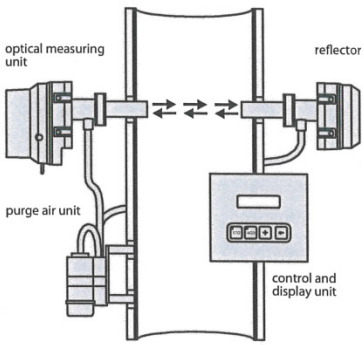
- Furnace plants with semi-anthracite coal, brown coal, fuel oil and combined heating
- Converter plants, asphalt mixing plants
- Plants for cement manufacture.

### Approvals

- Suitability-tested by the TÜV Cologne, test report 936/801017
- Itemized in the list of suitable measuring devices for continuous emission measuring.
- MCERTS.

### Measuring principle

The device operates using the double-pass method according to the auto-collimation principle. The light beam traverses the measuring distance twice. The attenuation of the light beam by the dust content in the measuring section is measured and evaluated.




### System components

- Mounting flanges
- Measuring head
- Reflector
- Control and display unit
- Purge air unit.

### Options

- Bus interface, e.g. Modbus or similar
- Automatic quick-closing shutters to protect the measuring head and the reflector in the event of failure of the purge air
- Weather protection covers, for outdoor installation
- Explosion proof design for EEx p, Zone 1 or Zone 2
- With an additional display unit at the measuring location, the control and display unit can be installed in up to 1000 m distance away
- Temperature compensation through additional analog input
- Special model for measuring distances up to 18 m with 2 purge air units
- Filter set for sensitivity and linearity control.

| | | | |
|---|---|---|---|
| measurements | opacity, extinction | detection limit | 0.75% @ extinction 0–0.1 |
| switchable measuring ranges | opacity: 0–20% ... 0–100%<br>extinction: 0–0.1 ... 0–1.6<br>dust: 0–80 mg/m³ ... 0–4000 mg/m³ [1)] | reference point drift | <0.4% of measuring range/month |
| measuring principle | transmission | zero point drift | <0.4% of measuring range/month |
| flue gas temperature | above dew point up to 250°C, optional up to 1000°C, depending on application | supply voltage | 95–264 VAC, 47–63 Hz, 30 VA |
| flue gas pressure | -50 up to +20 hPa, optional higher | dimensions (h x w x d) | measuring head 363 x 185 x 398 mm |
| duct diameter | 1 up to 12 m, optional up to 18 m | weight | 7 kg |
| ambient temperature | -20 up to +50°C, optional higher | remarks | [1)] with reference to one meter of path length after gravimetric calibration |
| protection | IP65, Ex optional | **purge air supply** | |
| measuring outputs | 2 x 0 / 4–20 mA / 500 Ohm, manual or automatic measuring range switching, optional Modbus RTU, Profibus DP | purge air quantity | approx. 80 m³/h |
| digital outputs | 6 programmable relay outputs, permissable load 48 V / 0.5 A | supply voltage | 115/230 VAC, 50/60 Hz, 0.37 / 0.43 kW |
| digital inputs | 6 programmable potential free inputs | dimensions (h x w x d)<br>weight | 350 x 550 x 500 mm<br>12 kg |
| accuracy | <1% of measuring range | protection | IP65 |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